



# **ARMY MODELING & SIMULATION REQUIREMENTS TO SUPPORT THE QUADRENNIAL DEFENSE REVIEW 2001**

## **DOD MODELING AND SIMULATION CONFERENCE**

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*On Point for the Nation . . . Persuasive in Peace, Invincible in War*

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### 3. Risk?

## 10. Lessons Learned Balkans?

## 4. Homeland Defense?

## 12. Infrastructure Requirements?

# 1. Alternative Defense Strategies?

## 5. Future Power Projection and Operations?

## 2. Required Joint and Army Full Spectrum Capabilities?

## 9. Modernization Strategies?

## 8. Transformation?

## 11. PERSTEMPO

### Impact on Readiness?

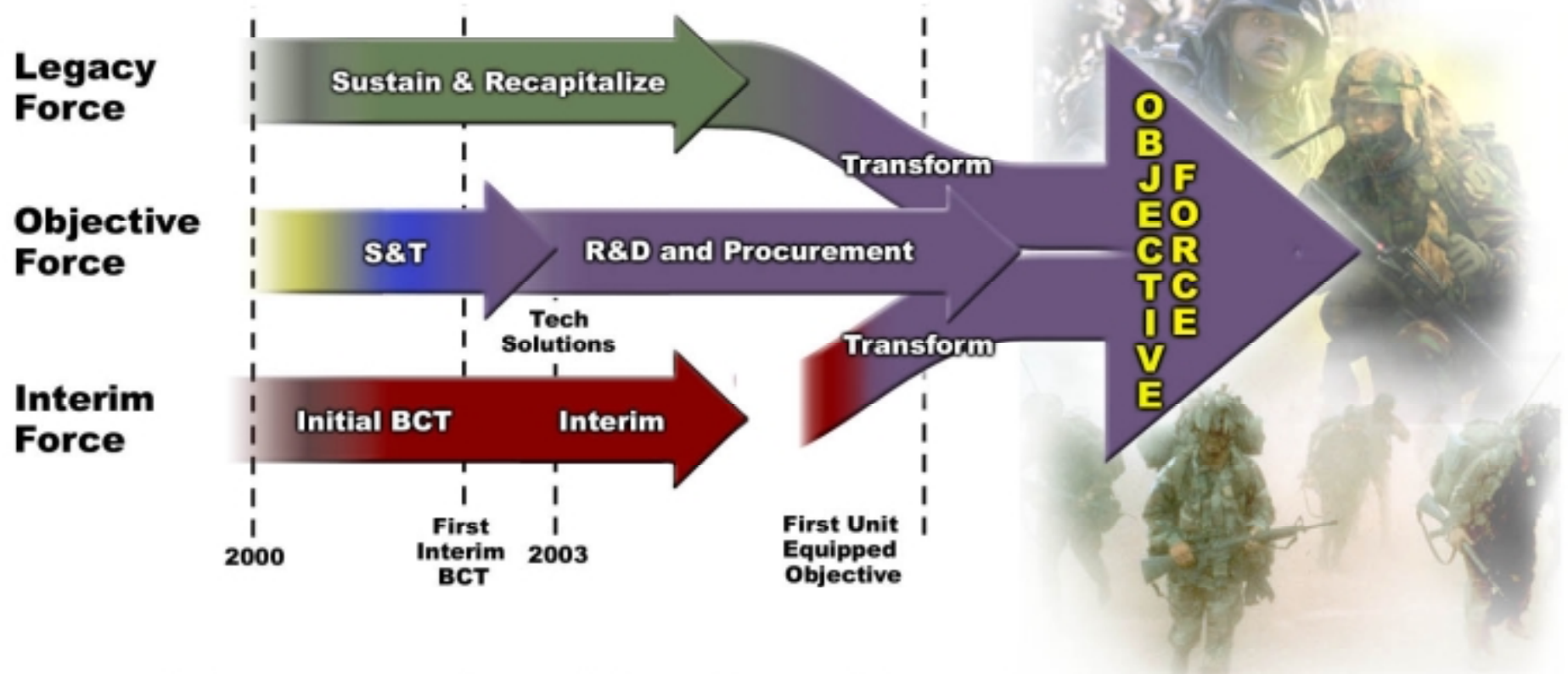
## 7. Readiness

### Impact of Recurring Operations Other Than War?

## 6. Roles of Active and Reserve Forces?

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# ***The Army Transformation***



***... Responsive, Deployable, Agile, Versatile,  
Lethal, Survivable, Sustainable.***

# Strategy & Force Structure

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## ✓ QDR Issues.

- What are the alternatives to the current defense strategy (shape, respond & prepare now) and the 2-MTW construct, and what are the associated impacts on the Army?
- How should we define and assess risk? Where can we accept additional risk, and where can we mitigate risk? How can war fighting risk be minimized throughout the Transformation?

## ✓ Analysis Issues.

- What are required capabilities and force sizing criteria?
- What are interim and objective force structure requirements?
- What are the near-, mid, and far-term force structure tradeoffs?

## ✓ M&S Issues.

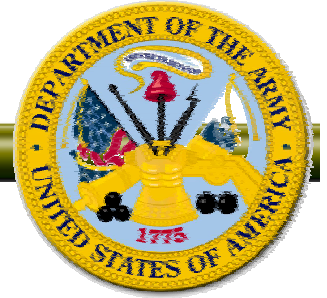
- Need capability to assess operational warfighting contribution and risk of alternative strategies and force structures across the full spectrum of operations in varied scenarios (e.g., urban operations).
  - Major Theaters of War (MTWs).
  - Smaller Scale Contingencies (SSCs) (high end and low end).
  - Peacetime engagement and presence.
  - Homeland Defense.

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# Force Generation

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## ✓ QDR Issue(s).

- What are the Joint and Army support force capabilities required to implement the NMS across the full spectrum of operations?

## ✓ Analysis Issue(s).

- What are the CS / CSS impacts of new force mixes and designs?
- What is the interim and objective force structure requirements (CS / CSS) and near-, mid, far-term tradeoffs?
- How should High Demand / Low Density unit issue be addressed in force mix?
- What are appropriate CS / CSS allocation rules for interim and objective forces?

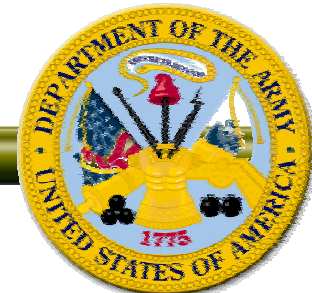
## ✓ M&S Issue(s).

- Total Army Analysis (TAA) does an adequate job of identifying CS / CSS support structure requirements.

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# Strategic Mobility and Sustainment

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## ✓ QDR Issues.

- How will the Army, as part of a joint force, project power and operate in the future?
- What does the Army need to do to be more strategically responsive (mobilization, deployment, readiness, sustainment, & logistics)?

## ✓ Analysis Issues.

- What are effective and efficient forward stationing and pre-positioning strategies?
- Do alternative force mixes and designs make the Army more strategically responsive for SSCs and MTWs?
- What is the value of speed?

## ✓ M&S Issues.

- Theater level campaign models dependent on inputs from deployment models.
- Logistics and sustainment not represented explicitly in theater level campaign models.
- Operational level models only represent limited duration warfight (days).

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# Infrastructure

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## ✓ QDR Issue(s).

- What is the impact of limited infrastructure, e.g., Kosovo like setting on force capabilities?
- What are the infrastructure requirements to support the Army of the future?

## ✓ Analysis Issue(s).

- What are the basing and infrastructure tradeoffs near-, mid, far-term.
- What are institutional and organizational training requirements?
- What are force structure mobilization and deployment requirements?
- What are the industrial base / logistical requirements?

## ✓ M&S Issue(s).

- Capability needed to perform operational level analyses for High and Low end SSC in circumstance with limited infrastructure.
- Need M&S tool that identifies effective and efficient basing alternatives and trades.

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# Equipping

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## ✓ QDR Issue(s).

- What changes are required to the Army's modernization strategy and plan to ensure Army forces will be able to fulfill future responsibilities?
- Develop affordable and effective modernization strategies and modernization plans to support Transformation.

## ✓ Analysis Issue(s).

- IAV & FCS analyses supporting milestone decisions (JROC& DAB).
- Functional area modernization plan / strategies analysis, e.g., aviation fleet mix analysis.
- Cross functional area modernization plan / strategies analysis, e.g., aviation fleet mix analysis,, and armor anti-armor analyses.
- Affordability analysis at item, functional area and cross functional area levels in near-, mid-, far-term timeframes.

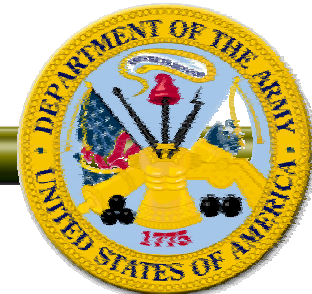
## ✓ M&S Issue(s).

- Theater level models do not represent weapon systems at a level of resolution that allows for weapon system trades or modernization versus force structure trades.
- Need ability to effectively represent operational warfighting contribution and affordability of weapons systems in functional area, cross functional area, and interim versus objective force trades.

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# Doctrine & Force Design Concepts

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## ✓ QDR Issue(s).

- What are the recommended organization and operational concepts for the Transformed Army?

## ✓ Analysis Issue(s).

- What are warfighting capabilities of alternative unit designs and concepts of operation at the brigade, division, and corps and theater levels for interim and objective forces?
- Strategy and Force Structure decisions are dependent on ongoing organizational and operational concept analyses for Interim and Objective Forces.

## ✓ M&S Issue(s).

- Representation of the value of situational awareness and C4ISR capabilities within operational and tactical level tools is key to development of interim and objective force designs and concepts of operation.

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# Data Collection & Certification

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## ✓ Issue(s)

- Need to improve joint certification and validation of all data.
- Lack authoritative decision-maker on data disagreements.
- Lack of “AMSAA” type organization for performance certification for developmental systems.
- Cross leveling of service performance data is a critical issue in all key studies.

## ✓ Idea.

- The Joint Technical Coordinating Group for Munitions Effectiveness is uniquely postured to provide performance data support for Joint analyses.
- In its current role the JTTCG-ME is responsible for review and authentication of effectiveness data, joint methods, and consistency of joint service representations of weapons' effectiveness.
- This concept for fielded systems needs to be extended to future systems.

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